

1645

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/927,112

DATE: 01/29/2002

TIME: 12:19:42

Input Set : D:\38155-20048.txt

Output Set: N:\CRF3\01292002\I927112.raw

4 <110> APPLICANT: Millennium Pharmaceuticals, Inc. Meyers, Rachel Silos-Santiago, Inmaculada 6 <120> TITLE OF INVENTION: 32544, a novel human phospholipase C and uses thereof 11 <130> FILE REFERENCE: 38155-20048.00 13 <140> CURRENT APPLICATION NUMBER: US 09/927,112 14 <141> CURRENT FILING DATE: 2001-08-10 16 <150> PRIOR APPLICATION NUMBER: US 60/246,808 17 <151> PRIOR FILING DATE: 2000-11-08 19 <160> NUMBER OF SEQ ID NOS: 17 21 <170> SOFTWARE: FastSEQ for Windows Version 4.0 23 <210> SEQ ID NO: 1 24 <211> LENGTH: 4635 25 <212> TYPE: DNA

ENTERED

710

26 <213> ORGANISM: Homo sapiens 28 <220> FEATURE: 29 <221> NAME/KEY: CDS 30 <222> LOCATION: (435)...(4058) 32 <400> SEQUENCE: 1 60 33 tcgcgatcta gaactagtgg cacggctcct gcactcccac tgccgcagga actgctcagg 34 aacctgccgg tctccggctg ggacggtggc tggatcagct caagcctcca gggccctgag 120 180 35 gctgaggggc tgagtgctca ttccagccgc ctcgggggaac ccgggctggg agaccccatg 240 36 cctgggggtg agcctggagc cagggcagtg cggtgagagg ctccggagag agggctgggc 300 37 accaccagge ttgggtgtgt gatgegetge tggeccagge tacaccecga caagggacae 360 38 cgggggccct gggagcagag agacctcaga gcagcctcct cctgcctcct gtggacggcc 420 39 ggccccagct ggtgatccca gccagtccca gctttcagtt gctgccccca ccgacagtcc 40 tcagtccctc catg atg gct ccc ccg aca gcc ggc ccc ctt cct ggc cca 470 Met Ala Pro Pro Thr Ala Gly Pro Leu Pro Gly Pro 41 42 518 44 gct ctt ccg cct gag gac cca ggg ccg gat ccg gag agc agg tgg ctt 45 Ala Leu Pro Pro Glu Asp Pro Gly Pro Asp Pro Glu Ser Arg Trp Leu 20 566 48 ttc ttg agc gcc aac att ctg ccc gtg gtg gag cgg tgc atg ggt gcc 49 Phe Leu Ser Ala Asn Ile Leu Pro Val Val Glu Arg Cys Met Gly Ala 35 50 614 52 atg caa gag ggg atg cag atg gtg aag ctg cgt ggc ggc tcc aag ggc 53 Met Gln Glu Gly Met Gln Met Val Lys Leu Arg Gly Gly Ser Lys Gly 50 662 56 ctg gtc cgc ttc tac tac ctg gac gag cac cgc tcc tgc atc cgc tgg 57 Leu Val Arg Phe Tyr Tyr Leu Asp Glu His Arg Ser Cys Ile Arg Trp 75 70 65 58

60 agg ccc tca cgc aag aac gag aag gcc aag atc tcc atc gac tcc atc



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61 62	Arg	Pro	Ser	Arg 80	Lys	Asn	Glu	Lys	Ala 85	Lys	Ile	Ser	Ile	Asp 90	Ser	Ile	
64	cag	gag	gtg	agt	gag	ggg	cgg	cag	tcg	gag	gtc	ttc	cag	cgc	tac	cct	758
65	Gln	Glu	Val	Ser	Glu	Gly	Arg	Gln	Ser	Glu	Val	Phe	Gln	Arg	Tyr	Pro	
66			95					100					105				
68	gac	ggc	agc	ttc	gac	ccc	aac	tgc	tgc	ttc	agc	atc	tac	cac	ggc	agc	806
69	Asp	Gly	Ser	Phe	Asp	Pro	Asn	Cys	Cys	Phe	Ser	Ile	Tyr	His	Gly	Ser	
70		110					115					120					
72	cac	cgc	gag	tcg	ctg	gac	ctg	gtc	tcc	acc	agc	agc	gag	gtg	gcg	cgc	854
73	His	Arg	Glu	Ser	Leu	Asp	Leu	Val	Ser	Thr		Ser	Glu	Val	Ala		
	125					130					135					140	000
76	acc	tgg	gtc	act	ggc	ctg	cgc	tac	ctc	atg	gcc	ggc	atc	agc	gac	gag	902
77	Thr	Trp	Val	Thr		Leu	Arg	Tyr	Leu		Ala	GLY	He	Ser	Asp	GIU	
78					145					150					155		950
80	gac	agc	ctg	gct	cgc	cgc	cag	cgc	acc	agg	gac	cag	Egg	ctg	aag	Cln	930
	Asp	Ser	Leu		Arg	Arg	GIn	Arg		Arg	Asp	GIN	тгр	170	Lys	GIII	
82				160					165	~~+	~~~	200	a+ a		a++	aac	998
84	acg	ttt	gac	gag	gcc	gac	aag	aac	999	gat	ggc	age	Tou	cár	att	Clv	990
	Thr	Phe		GLU	Ата	Asp	гаг		GIY	Asp	GLY	ser	185	261	Ile	GIY	
86			175		-+-	a+ ~	a a	180	ata	220	a+a	220		ccc	caa	can	1046
88	gag	gtc	ctg	cag	CLG	Tou	uic	Tuc	Teu	Aac Aan	y Ly Val	Aen	Len	Pro	cgg Arg	Gln	1010
	GIU		ьeu	GIII	ьeu	ьeu	195	пуз	пец	ASII	Val	200	БСС	110	*** 9	0111	
90	200	190	224	aaa	ata	ttc		maa	aca	gac	acq		gac	cac	caa	aaa	1094
92	۵yy	y Ly Val	Tyre	Cln	Mot	Phe	Δra	Glu	Δla	Asp	Thr	Asp	Asp	His	Gln	Gly	_
	205	Val	цуз	GIII	ricc	210	n- 9	Olu	1114	пор	215					220	
		cta	aat	+++	gaa		ttc	t.at.	acc	ttc		aaq	atq	atq	tcc	acc	1142
97	Thr	Leu	Glv	Phe	Glu	Glu	Phe	Cvs	Ala	Phe	Tyr	Lys	Met	Met	Ser	Thr	
98			0-1		225			-		230	-	-			235		
	0 ca	ट टव	g ga	c ct	c ta	c cto	gcto	ate	gct	gac	c ta	c ag	c aa	c ca	c aag	g gac	1190
10	1 Ar	a Ar	g As	p Lei	u Ty:	r Lei	Lei	ı Me	t Lei	ı Th	r Ty	r Se	r As	n Hi	s Lys	s Asp	
10				24					245					25			
10	4 ca	c ct	g ga	t gc	c gc	c ag	cate	g cag	g cg	c tt	c ct	g ca	g gt	g ga	g ca	g aag	1238
10	5 Hi	s Le	u As	p Ala	a Ala	a Se	r Le	ı Glı	n Ar	g Ph	e Le	u Gl	n Va	l Gl	u Glı	n Lys	
10			25					26					26	_			
10	8 at	g gc	g gg	t gt	g ac	c ct	c ga	g ag	c tg	c ca	g ga	c at	c at	c ga	g ca	g ttt	1286
10	9 Me	t Al	a Gl	y Va	l Th	r Le	u Gl	ı Se	r Cys	s Gl	n Asj			e Gl	u Gl	n Phe	
11		27					27					28					
11	2 ga	g cc	a tg	c cc	a ga	a aa	c aa	g ag	t aaq	g gg	g ct	g ct -	g gg	c at	t ga	t ggc	1334
11	3 G1	u Pr	о Су	s Pr	o Gl			s Se	r Ly:	s Gl			u GI	A II	e As	p Gly	
	4 28					29					. 29					300	1 202
11	6 tt	c ac	c aa	c ta	c ac	c ag	g ag	C CC	t gc	t gg	t ga	c at	c tt	c aa	C CC	t gag	1382
		e Th	r As	n Ty			g Se	r Pr	O AL			р п	e Pn	e As	n Pro	o Glu	
11					30					31	-				31		1430
12	0 ca	c ca	c ca	t gt	g ca	c ca	g ga	c at	g ac	g ca	g cc	y ct	y ag	c ca	c m	c ttc	1430
		s Hi	s Hi			s GI	n As	ь ме			n PT	о те	u se	т ні 33		r Phe	
12	2			32				<b>.</b> +-	32 a at		~ ~~	+ ~-	a a-			a taa	1478
12	4 at	c ac	c tc	g tc	c ca	c aa	c ac	∪ ta - m	C CT	c gc	y 99 1 ~1	ιya πλ∼	n Cl	y CL	u au	g tcc	14,0
12	5 Il	e Th	r Se	r Se	r Hı	s As	n Tn	т ту	т. те.	u va	7 GT	y AS	h GT	и те	u me	t Ser	

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126			335					340					345				
128	caq	tca	cqq	gtg	gac	atg	tat	gct	tgg	gtc	ctg	cag	gct	ggc	tgc	cgc	1526
129	Gln	Ser	Arg	Val	Asp	Met	Tyr	Ala	Trp	Val	Leu	Gln	Ala	Gly	Cys	Arg	
130		350					355					360					
132	tgc	gtg	gag	gtg	gac	tgc	tgg	gat	ggg	CCC	gac	ggg	gag	ccc	att	gtg	1574
133	Cys	Val	Glu	Val	Asp	Cys	Trp	Asp	Gly	Pro	Asp	Gly	Glu	Pro	Ile	Val	
134	365					370					375					380	
136	cac	cat	ggc	tac	act	ctg	act	tcc	aag	atc	ctc	ttc	aaa	gac	gtc	att	1622
137	His	His	Gly	Tyr	Thr	Leu	Thr	Ser	Lys		Leu	Phe	Lys	Asp	Val	Ile	
138					385					390					395	•	1670
140	gaa	acc	atc	aac	aaa	tat	gcc	ttc	atc	aag	aat	gag	tac	cca	gtg	atc	1670
141	Glu	Thr	Ile	Asn	Lys	Tyr	Ala	Phe		Lys	Asn	Glu	Tyr		vaı	He	
142				400					405					410			1718
144	ctg	tcc	atc	gaa	aac	cac	tgc	agt	gtc	atc	cag	cag	aag	aaa	Mo+	31a	1/10
	Leu	Ser		Ğlu	Asn	Hıs	Cys		vaı	ITE	GIN	GIN	LуS 425	туу	Met	Ala	
146			415	- 4-				420	~~~	225	ata	a 2 a		+ < =	tca	ata	1766
148	cag	tat -	ctg	act	gac	atc	CTT	999	gac	Tuc	Tou	Nan	Len	Ser	Ser	Val	1,00
	GIn		Leu	Thr	Asp	шe	435	GIY	ASP	гу	ьeu	440	шец	DCI	DCI	741	
150		430		gat	~~~	2.00		ata	CCC	tat	cca		atσ	ata	ааσ	aac	1814
152	age	ayı cor	Clu	Asp	λla	Thr	Thr	T.e.ii	Pro	Ser	Pro	Gln	Met	Leu	Lvs	Gly	
	445	ser	GIU	АБР	АІа	450	1111	пси	110	001	455	02			-1-	460	
154	220	ato	ct c	gtg	aaσ		ааσ	ааσ	ctc	cca		aac	atc	aqc	gag	gat	1862
157	Tag	Tle	Len	Val	Lvs	Glv	Lvs	Lvs	Leu	Pro	Ala	Asn	Ile	Ser	Ğlu	Asp	
158	цуз	110	шси	741	465	011	_10	-1-		470					475		
160	aca	σασ	σaa	ggc		ata	tct	gat	gag	gac	agt	gct	gat	gag	att	gac	1910
161	Ala	Glu	Glu	Gly	Glu	Val	Ser	Asp	Glu	Asp	Ser	Ala	Asp	Glu	Ile	Asp	
162				480				_	485		•			490			
164	gat	gac	tgc	aag	ctc	ctc	aat	ggg	gat	gca	tcc	acc	aat	cga	aag	cgt	1958
165	Asp	Asp	Cys	Lys	Leu	Leu	Asn	Gly	Asp	Ala	Ser	Thr	Asn	Arg	Lys	Arg	
166			495					500					505				
168	gta	gaa	aac	act	gct	aag	agg	aaa	ctg	gat	tcc	ctc	atc	aaa	gag	tcg	2006
169	Val	Glu	Asn	Thr	Ala	Lys			Leu	Asp	Ser	Leu	Ile	Lys	Glu	Ser	
170		510					515					520					2054
172	aag	att	cgg	gac	tgt	gag	gac	ccc	aac	aac	ttc	tcc	gtc	tcc	aca	ctg	2054
			Arg	Asp	Cys		Asp	Pro	Asn	Asn			vaı	Ser	Thr	ьеu 540	
	525					530					535		, ~~~~	~~~	<b>~</b> ~ ~		2102
176	tcc	cca	tct	gga	aag	ctc	gga	cgc	aag	agc	aag	312	Glu	Glu	yac Aen	Val	2102
		Pro	Ser	Gly			GIY	Arg	гу	261	цуь	нта	GIU	GIU	555	Vai	
178		<b>.</b>		~~~	545		~~~										2150
180	gag	Con	999	gag Glu	yaı	712	999 G177	Ala	Ser	Ara	Ara	Asn	Glv	Ara	Leu	Val	
182		ser	GIY	560		Ата	Gry	AIG	565		**** 9		<b>υ</b> Ξ1	570			
		aas	adc	ttc		agg	cac	aaσ			aac	aσc	aaq	ctq	aaq	aag	2198
195	9 L9	99a	Ser	Phe	Ser	Ara	Ara	Lvs	Lvs	Lvs	Glv	Ser	Lvs	Leu	Lys	Lys	
186		GLY	575		001	9	5	580		-1-	1		585		-	-	
188	aca	gee		gtg	gag	qaσ	qqa			gqt	caq	gac	tcc	ccg	gga	ggc	2246
189	Ala	Ala	Ser	Val	Glu	Glu	Glv	Asp	Ğlu	Gly	Gln	Asp	Ser	Pro	Gly	Gly	
190		590				_	595			-		600					



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192	cag	agc	Cga Ara	999 Gl v	g c g	Thr	Ara	Gln	Lvs	Lvs	Thr	Met	Lys	Leu	Ser	Arg	
193		261	AIG	GLY	ALG	610	**** 9	02		-1-	615		•			620	
196	acc	ctc	tct	qac	ctq	gtg	aag	tac	acc	aag	tcc	gtg	gcc	acc	cac	gac	2342
197	Ala	Leu	Ser	Asp	Leu	Val	Lys	Tyr	Thr	Lys	Ser	Val	Ala	Thr	His	Asp	
198					625					630					635		0.200
200	ata	gag	atg	gag	gcg	gcg	tcc	agc	tgg	cag	gtg	tcg	tcc	ttc	agc	gag	2390
201	Ile	Glu	Met	Glu	Ala	Ala	Ser	Ser		Gln	Val	Ser	Ser	Phe	Ser	GIU	
202				640					645			~~~	a > a	650	at a	cac	2438
204	acc	aag	gcc	cac	cag	att	ctg	cag	cag	aag	Bro	ηCG	cag Gln	Tur	T.e.ii	Ara	2430
	Thr	Lys		Hls	GIn	TTE	Lеu	660	GIII	гур	PIO	ΑΙα	Gln 665	- <u>7</u> -	БСС	1119	
206	++-	224	655	a a a	car	ctc	tcc		atc	tac	ccc	tcc	tcc	tac	cgt	gtg	2486
200	Dho	Acn	Cay Cln	Gln	Gln	Leu	Ser	Ara	Ile	Tyr	Pro	Ser	Ser	Tyr	Arg	Val	
210	rne	670	01	01	01		675			-		680					
212	gac	tcc	aqc	aac	tac	aac	ccg	cag	ccc	ttc	tgg	aac	gcc	ggc	tgc	caa	2534
213	Asp	Ser	Ser	Asn	Tyr	Asn	Pro	Gln	Pro	Phe	Trp	Asn	Ala	Gly	Cys	GIn	
214	685					690					695					700	2502
216	atg	gtt	gcc	ctg	aac	tac	cag	tca	gag	ggg	cgg	atg	ctg	cag	ctg	aac	2582
217	Met	Val	Ala	Leu		Tyr	Gln	Ser	Glu	Gly	Arg	Met	Leu	GIn	Leu	Asn	
218					705					710		+	۳±۵	ata	715	cct	2630
220	cga	gcc	aag	ttc	agc	gcc	aac	ggt	ggc	tgc	gge	Tur	gta Val	Len	Luc	Pro	2000
	Arg	Ala	Lys		Ser	Ala	Asn	GLY	725	Cys	GIY	тАт	Val	730	цуз	110	
222			-+	720	a 2 a	~~~	ata	ttc		ccc	aac	tca	gag		ccc	ctq	2678
224	999	Cyc	Met	Cve	Gln	Glv	Val	Phe	Asn	Pro	Asn	Ser	Glu	Asp	Pro	Leu	
225	GIY	Cys	735	Cys	OIII	011	,	740					745	-			
228	CCC	aaa	cag	ctc	aaq	aaq	cag	ctg	gtg	ctc	cgg	atc	atc	agt	ggc	cag	2726
229	Pro	Gly	Gln	Leu	Lys	Lys	Gln	Leu	Val	Leu	Arg	Ile	Ile	Ser	Gly	Gln	
230		750					755					760					0774
232	cag	ctt	ccc	aag	ccg	cgc	gac	tcc	atg	ctg	ggg	gac	cgt	ggg	gag	atc	2774
		Leu	Pro	Lys	Pro		Asp	Ser	Met	Leu	Gly	Asp	Arg	GTĀ	GIU	780	
234	765				_	770					775		aat	a+a	~ ~ ~		2822
236	atc	gac	CCC	ttt	gtg	gag	gtg	gag	atc	att	999	Ten	cct	Val	) ac	Cvs	2022
	Ile	Asp	Pro	Pne	785		val	GIU	116	790		цеч	Pro	var	795	012	
238	200	244	~~~	C P C			ata	ata	gac			aaa	ttc	aac		acc	2870
240	Ser	Ara	Glu	Gln	Thr	Ara	Val	Val	Asp	Asp	Asn	Gly	Phe	Asn	Pro	Thr	
241		птэ	Gru	800					805			-		810			
244	taa	gag	gag	acc	ctg	gtt	ttc	atg	gtg	cac	atg	ccg	gag	ato	gcg	ctg	2918
245	Trp	Glu	Glu	Thr	Leu	val	Phe	Met	Val	His	Met	Pro	Glu	Ile	Ala	Leu	
246			815					820					825				2066
248	gtc	cgc	ttc	ctc	gto	: tgg	gac	cac	gat	ccc	ato	999	cgt	gac	tto	att	2966
				Leu	Val	Trp			Asp	Pro	Ile	GLY	Arg	Asp	Pne	Ile	
250		830					835			+ ~	+ .	840		+ = 0	. 202	CaC	3014
252	ggc	cag	agg	acg	ctg	gcc יוגי	Dha	ago	ago	alg Mot	alg Met	Pro	. ggc	Tvr	. Ara	His	5024
			arg	Thr	Leu	850		: sel	261	rie t	855	, , , , ,	, ory	-1-	9	860	
254	845	. +	· c+>	(723	aac			gag	ade	tac			ata	cat	. gta	gct	3062
∠ ⊃6	919	Lac	. Cla	yaa	999	, ary	940	. 549	500				J - 5			-	



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				_	_					<b>a</b>	<b>-</b> 1 -	nh -	17a 1	ui a	17-1	מוא	
	Val	Tyr	Leu	Glu		Met	Glu	GIu	Ala		11e	Pne	val	птъ	875	Ald	
258					865					870	a a t	ata	~~~	ct a		aac	3110
260	gtc	agt	gac	atc	agc	ggt	aag	gtc	aag	cay	31a	Tau	Glv	T.e.ii	Lvs	Glv	3210
	Val	Ser	Asp		Ser	GIY	гĀг	vaı	Lys	GIII	Ala	пеп	GLY	890	цуз	OI,	
262				880					885		-+-	~~ <b>~</b>	2 <b>4</b> +		act	act	3158
264	ctc	ttc	ctc	cga	ggc	cca	aag -	CCC	ggc	teg	t	yac 3 an	com	Uic	אפנ	λla	3130
265	Leu	Phe		Arg	Gly	Pro	Lys		Gly	ser	ьeu	ASP	905	птъ	мта	AIG	
266			895					900			~~~	~~~		a+ a	aaa	cac	3206
268	ggg	cgg	ccc	ccg	gcc	cgg	ccc	tcc	gtt	agc	cag	cgg	Tlo	Tou	724	λrα	3200
269	Gly	Arg	Pro	Pro	Ala	Arg		ser	Val	ser	GIN	Arg	116	ьeu	AIG	AIG	
270		910					915					920	~~~	200	aaa	++0	3254
272	acg	gcc	agc	gcc	ccg	acc	aag	agc	cag	aag	ccg	990	200	ayy	2117	Phe	J2 J4
		Ala	Ser	Ala	Pro		Lys	Ser	Gln	Lys	Pro	GLY	Arg	Arg	СТУ	940	
274	925					930					935				a+a		3302
276	ccg	gag	ctg	gtc	ctg	ggt	aca	cgg	gac	aca -	ggc	tcc	aag	999	gra	gca Nla	3302
277	Pro	Glu	Leu	Val		Gly	Thr	Arg	Asp		GIY	Ser	гля	GLY	VEE	Ala	
278					945					950					955		3350
280	gac	gat	gtg	gtg	ccc	CCC	ggg	ccc	gga	cct	gct	ccg	gaa	gcc	cca	gee	3330
281	Asp	Asp	Val	Val	Pro	Pro	Gly	Pro	Gly	Pro	Ala	Pro	GLu	Ala	Pro	Ala	
282				960					965					970			2200
284	cag	gag	ggg	CCC	ggc	agc	ggc	agc	ccc	cga	ggt	aag	gcg	cca	gct	gcg	3398
285	Gln	Glu	Gly	Pro	Gly	Ser	Gly	Ser	Pro	Arg	Gly	Lys	Ala	Pro	Ala	Ala	
286			975					980					985				2446
288	gtg	gca	gag	aag	agc	cct	gtg	cga	gtg	cgg	ccc	ccg	cgt	gtc	ctg	gac	3446
289	Val	Ala	Glu	Lys	Ser	Pro	Val	Arg	Val	Arg	Pro	Pro	Arg	Val	Leu	Asp	
290		99	0				99.	5				100	0				2404
292	ggc	ccc	ggg	cct	gct	ggg	atg	gcc	gcc	aca	tgc	atg	aag	tgt	gtg	gtg	3494
293	Gly	Pro	Gly	Pro	Ala	Gly	Met	Ala	Ala	Thr	Cys	Met	Lys	Cys	Val	vaı	
294	100	5				101					101					1020	2542
296	gga	tcc	tgc	gcc	ggc	gtg	aac	acc	ggg	ggc	ctg	cag	agg	gag	cgg	cca	3542
297						1	3	ml		~1		Cln	Ara	Clu	7 ~~~		
201	Gly	Ser	Cys	Ala	Gly	vaı	Asn	Thr	GLY	GIA	ьeu	GIII	5		AIG	- 10	
298			Cys	Ala	102	5.				103	0				103	5	2500
298 300	ccc	aσc	Cys	Ala	102 cct	5 . gca	agc	agg	cag	103 gca	0 gcc	att	cgc	cag	cag	ccc	3590
298 300	ccc	aσc	Cys	Ala	102 cct	5 . gca	agc	agg	cag	103 gca	0 gcc	att	cgc	cag Gln	cag Gln	ccc	3590
298 300 301 302	ccc Pro	agc Ser	Cys ccg Pro	Ala ggg Gly 104	102 cct Pro 0	5 gca Ala	agc Ser	agg Arg	cag Gln 104	103 gca Ala 5	0 gcc Ala	att Ile	cgc Arg	cag Gln 105	cag Gln 0	ccc Pro	
298 300 301 302 304	ccc	agc Ser	Cys ccg Pro	ggg Gly 104	102 cct Pro 0 gac	gca Ala tca	agc Ser	agg Arg	cag Gln 104 gcc	103 gca Ala 5 ccc	0 gcc Ala tgc	att Ile tgt	cgc Arg	cag Gln 105 ctg	cag Gln 0 gac	ccc Pro	3590 3638
298 300 301 302 304	ccc	agc Ser	Cys ccg Pro	ggg Gly 104	102 cct Pro 0 gac	gca Ala tca	agc Ser	agg Arg ggg Gly	cag Gln 104 gcc Ala	103 gca Ala 5 ccc	0 gcc Ala tgc	att Ile tgt	cgc Arg ggc Gly	cag Gln 105 ctg Leu	cag Gln 0 gac	ccc Pro	
298 300 301 302 304 305 306	ccc Pro cgg Arg	agc Ser gcc Ala	Cys ccg Pro cgg Arg	ggg Gly 104 gct Ala	102 cct Pro 0 gac Asp	gca Ala tca Ser	agc Ser ctg Leu	agg Arg ggg Gly 106	cag Gln 104 gcc Ala	103 gca Ala 5 ccc Pro	0 gcc Ala tgc Cys	att Ile tgt Cys	cgc Arg ggc Gly 106	cag Gln 105 ctg Leu 5	cag Gln 0 gac Asp	ccc Pro cct Pro	3638
298 300 301 302 304 305 306 308	ccc Pro cgg Arg	agc Ser gcc Ala	Cys ccg Pro cgg Arg 105	ggg Gly 104 gct Ala 5	102 cct Pro 0 gac Asp	gca Ala tca Ser	agc Ser ctg Leu	agg Arg ggg Gly 106	cag Gln 104 gcc Ala 0	gca Ala 5 ccc Pro	gcc Ala tgc Cys	att Ile tgt Cys	cgc Arg ggc Gly 106 ggt	cag Gln 105 ctg Leu 5	cag Gln 0 gac Asp	ccc Pro cct Pro	
298 300 301 302 304 305 306 308	ccc Pro cgg Arg	agc Ser gcc Ala	Cys ccg Pro cgg Arg 105	ggg Gly 104 gct Ala 5	102 cct Pro 0 gac Asp	gca Ala tca Ser	agc Ser ctg Leu	agg Arg ggg Gly 106	cag Gln 104 gcc Ala 0	gca Ala 5 ccc Pro	gcc Ala tgc Cys	att Ile tgt Cys	cgc Arg ggc Gly 106 ggt	cag Gln 105 ctg Leu 5	cag Gln 0 gac Asp	ccc Pro cct Pro	3638
298 300 301 302 304 305 306 308 309	ccc Pro cgg Arg cac	agc Ser gcc Ala gct Ala	Cys ccg Pro cgg Arg 105 atc Ile	ggg Gly 104 gct Ala 5 ccg Pro	102 cct Pro 0 gac Asp ggg	gca Ala tca Ser aga Arg	agc Ser ctg Leu agc Ser 107	agg Arg ggg Gly 106 aga Arg	cag Gln 104 gcc Ala 0 gag Glu	103 gca Ala 5 ccc Pro gcc Ala	gcc Ala tgc Cys ccc Pro	att Ile tgt Cys aag Lys 108	cgc Arg ggc Gly 106 ggt Gly 0	cag Gln 105 ctg Leu 5 cct Pro	cag Gln 0 gac Asp ggg	ccc Pro cct Pro	3638
298 300 301 302 304 305 306 308 310 312	ccc Pro cgg Arg cac	agc Ser gcc Ala gct Ala 107	Cys ccg Pro cgg Arg 105 atc Ile	ggg Gly 104 gct Ala 5 ccg Pro	102 cct Pro 0 gac Asp ggg Gly	gca Ala tca Ser aga Arg	agc Ser ctg Leu agc Ser 107	agg Arg ggg Gly 106 aga Arg 5	cag Gln 104 gcc Ala 0 gag Glu	103 gca Ala 5 ccc Pro gcc Ala	gcc Ala tgc Cys ccc Pro	att Ile tgt Cys aag Lys 108	cgc Arg ggc Gly 106 ggt Gly 0	cag Gln 105 ctg Leu 5 cct Pro	cag Gln O gac Asp Gly Cly	ccc Pro cct Pro gcc	3638
298 300 301 302 304 305 306 308 310 312	ccc Pro cgg Arg cac	agc Ser gcc Ala gct Ala 107	Cys ccg Pro cgg Arg 105 atc Ile	ggg Gly 104 gct Ala 5 ccg Pro	102 cct Pro 0 gac Asp ggg Gly	gca Ala tca Ser aga Arg	agc Ser ctg Leu agc Ser 107	agg Arg ggg Gly 106 aga Arg 5	cag Gln 104 gcc Ala 0 gag Glu	103 gca Ala 5 ccc Pro gcc Ala	gcc Ala tgc Cys ccc Pro	att Ile tgt Cys aag Lys 108	cgc Arg ggc Gly 106 ggt Gly 0	cag Gln 105 ctg Leu 5 cct Pro	cag Gln O gac Asp Gly Cly	ccc Pro cct Pro gcc Ala	3638
298 300 301 302 304 305 306 308 310 312 313	ccc Pro cgg Arg cac His tgg Trp	agc Ser gcc Ala gct Ala 107 agg Arg	Cys ccg Pro cgg Arg 105 atc Ile cag Gln	ggg Gly 104 gct Ala 5 ccg Pro	102 cct Pro 0 gac Asp ggg Gly cca Pro	gca Ala tca Ser aga Arg ggc Gly	agc Ser ctg Leu agc Ser 107 ggt Gly	agg Arg ggg Gly 106 aga Arg 5 agc Ser	cag Gln 104 gcc Ala 0 gag Glu ggc	103 gca Ala 5 ccc Pro gcc Ala tcc Ser	gcc Ala tgc Cys ccc Pro atg Met	att Ile tgt Cys aag Lys 108 tcc Ser	ggc Gly 106 ggt Gly 0 tcg	cag Gln 105 ctg Leu 5 cct Pro gac Asp	cag Gln gac Asp Gly tcc	ccc Pro cct Pro gcc Ala agc Ser 1100	3638 3686 
298 300 301 302 304 305 306 308 310 312 313 314	ccc Pro cgg Arg cac His tgg Trp	agc Ser gcc Ala gct Ala 107 agg Arg	Cys ccg Pro cgg Arg 105 atc Ile 0 cag Gln	ggg Gly 104 gct Ala 5 ccg Pro	102 cct Pro 0 gac Asp ggg Gly cca Pro	gca Ala tca Ser aga Arg ggc Gly	agc Ser ctg Leu agc Ser 107 ggt Gly 0	agg Arg ggg Gly 106 aga Arg 5 agc Ser	cag Gln 104 gcc Ala 0 gag Glu ggc	103 gca Ala 5 ccc Pro gcc Ala tcc Ser	gcc Ala tgc Cys ccc Pro atg Met 109	att Ile tgt Cys aag Lys 108 tcc Ser 5	ggc Gly 106 ggt Gly 0 tcg	cag Gln 105 ctg Leu 5 cct Pro gac Asp	cag Gln gac Asp Gly tcc Ser	ccc Pro cct Pro gcc Ala agc Ser 1100	3638
298 300 301 302 304 305 306 308 310 312 313 314	ccc Pro cgg Arg cac His tgg Trp	agc Ser gcc Ala gct Ala 107 agg Arg	Cys ccg Pro cgg Arg 105 atc Ile 0 cag Gln	ggg Gly 104 gct Ala 5 ccg Pro	102 cct Pro 0 gac Asp ggg Gly cca Pro	gca Ala tca Ser aga Arg ggc Gly	agc Ser ctg Leu agc Ser 107 ggt Gly 0	agg Arg ggg Gly 106 aga Arg 5 agc Ser	cag Gln 104 gcc Ala 0 gag Glu ggc	103 gca Ala 5 ccc Pro gcc Ala tcc Ser	gcc Ala tgc Cys ccc Pro atg Met 109	att Ile tgt Cys aag Lys 108 tcc Ser 5	ggc Gly 106 ggt Gly 0 tcg	cag Gln 105 ctg Leu 5 cct Pro gac Asp	gac Asp ggg Gly tcc Ser	ccc Pro cct Pro gcc Ala sagc Ser 1100 gag	3638 3686 
298 300 301 302 304 305 306 308 310 312 313 314 316 317	ccc Pro cgg Arg cac His tgg Trp 108 agc	agc Ser gcc Ala gct Ala 107 agg Arg 5 cca Pro	Cys ccg Pro cgg Arg 105 atc Ile cag Gln gac	ggg Gly 104 gct Ala 5 ccg Pro ggt Gly	102 cct Pro 0 gac Asp ggg Gly cca Pro ccg Pro	gca Ala tca Ser aga Arg ggc Gly 109 ggc Gly	agc Ser ctg Leu agc Ser 107 ggt Gly 0 atc	agg Arg ggg Gly 106 aga Arg 5 agc Ser	cag Gln 104 gcc Ala 0 gag Glu ggc	103 gca Ala 5 ccc Pro gcc Ala tcc Ser agg Arg	gcc Ala tgc Cys ccc Pro atg Met 109 tcc Ser	att Ile tgt Cys aag Lys 108 tcc Ser 5	ggc Gly 106 ggt Gly 0 tcg Ser	cag Gln 105 ctg Leu 5 cct Pro gac Asp	gac Asp ggg tcc Ser cct Pro	ccc Pro cct Pro gcc Ala sagc Ser 1100 gag Glu	3638 3686  3734 3782
298 300 301 302 304 305 306 308 310 312 313 314 316 317 318	ccc Pro cgg Arg cac His tgg Trp 108 agc	agc Ser gcc Ala gct Ala 107 agg Arg 5 cca Pro	Cys ccg Pro cgg Arg 105 atc Ile Cag Gln gac	Ala  ggg Gly 104 gct Ala 5 ccg Pro ggt Gly ser	102 cct Pro 0 gac Asp ggg Gly cca Pro 110 caa	gca Ala tca Ser aga Arg ggc 109 ggc Gly 5	agc Ser ctg Leu agc Ser 107 ggt Gly 0 atc	agg Arg ggg Gly 106 aga Arg Ser ccc	cag Gln 104 gcc Ala 0 gag Glu ggc Gly gaa	103 gca Ala 5 ccc Pro gcc Ala tcc Ser agg Arg 111 cag	gcc Ala tgc Cys ccc Pro atg Met 109 tcc Ser 0 gga	att Ile tgt Cys aag Lys 108 tcc ser 5 ccc Pro	ggc Gly 106 ggt Gly 0 tcg Ser cgc	cag Gln 105 ctg Leu 5 cct Pro gac Asp	gac Asp ggg tcc Ser cct Pro	ccc Pro cct Pro gcc Ala agc Ser 1100 gag Glu	3638 3686 
298 300 301 302 304 305 306 308 310 312 313 314 316 317 318	ccc Pro cgg Arg cac His tgg Trp 108 agc	agc Ser gcc Ala gct Ala 107 agg Arg 5 cca Pro	Cys ccg Pro cgg Arg 105 atc Ile Cag Gln gac	Ala  ggg Gly 104 gct Ala 5 ccg Pro ggt Gly ser	102 cct Pro 0 gac Asp ggg Gly cca Pro 110 caa	gca Ala tca Ser aga Arg ggc 109 ggc Gly 5	agc Ser ctg Leu agc Ser 107 ggt Gly 0 atc	agg Arg ggg Gly 106 aga Arg Ser ccc	cag Gln 104 gcc Ala 0 gag Glu ggc Gly gaa	103 gca Ala 5 ccc Pro gcc Ala tcc Ser agg Arg 111 cag	gcc Ala tgc Cys ccc Pro atg Met 109 tcc Ser 0 gga	att Ile tgt Cys aag Lys 108 tcc ser 5 ccc Pro	ggc Gly 106 ggt Gly 0 tcg Ser cgc	cag Gln 105 ctg Leu 5 cct Pro gac Asp	gac Asp ggg tcc Ser cct Pro	ccc Pro cct Pro gcc Ala sagc Ser 1100 gag	3638 3686  3734 3782

Use of n and/or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to insure a corresponding explanation is presented in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/927,112

DATE: 01/29/2002 TIME: 12:19:43

Input Set : D:\38155-20048.txt

Output Set: N:\CRF3\01292002\I927112.raw

L:919 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17 L:923 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17